

## CLAIMS

What is claimed is:

1. A method of delivering a data packet from a source node to a destination node connected by several paths, comprising the steps of:
  - 5 providing packet queues at the source node, each queue associated with at least one path;
  - selecting a packet queue based on local information indicative of the state of paths;
  - moving the packet into the selected packet queue; and
  - 10 moving the packet from the selected packet queue through one of the at least one path associated with the selected packet queue.
2. The method of Claim 1 wherein the selecting of a packet queue depends on whether there is another packet queue containing less data.
3. The method of Claim 2 wherein the selecting of a packet queue depends on time stamps attached to packets in the queue.
  - 15 4. The method of Claim 1 wherein the selecting of a packet queue depends on whether the amount of data in the queue is over a limit amount for the queue.
  5. The method of Claim 4 wherein the selecting of a packet queue depends on time stamps attached to packets in the queue.
- 20 6. The method of Claim 1 wherein the selecting of a packet queue depends on the priority assigned to the queue and the depths of all the queues.

7. The method of Claim 1 wherein the selecting of an emergency packet queue depends on whether the amount of data in non-emergency packet queues is over a limit amount.
8. The method of Claim 1 wherein the selecting of a packet queue depends on time stamps attached to packets in the queue.  
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9. The method of Claim 1 further comprising
  - providing destination packet queues at the destination node;
  - attaching to each data packet a destination packet queue identifier;
  - placing the packets into the destination packet queues; and  
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  - after extracting a first packet from its destination packet queue,
  - extracting a second packet from the destination packet queue identified by the destination packet queue identifier attached to the first packet.
10. The method of Claim 1 further comprising
  - providing destination packet queues at the destination node;
  - before a data packet arrives at the destination node, attaching an epoch identifier to the data packet; and
  - determining that a packet has been lost based on an unexpected change in the epoch identifier.  
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11. The method of claim 1 wherein data packets are source routed from the source node.  
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12. A method of re-sequencing data packets arriving at a node on a network comprising the steps of:
  - providing packet queues at the node;
  - attaching to each data packet a queue identifier;

placing the packets into the queues;  
after extracting a first packet from its queue, extracting a second packet  
from the queue identified by the queue identifier attached to the first packet.

13. The method of Claim 12 further comprising associating each output queue with  
5 a path through the network to the node from a source node.
14. The method of Claim 11 further comprising  
before a data packet arrives at the node, attaching an epoch identifier to  
the data packet; and  
determining that a packet has been lost based on an unexpected change in  
10 the epoch identifier.